



Office of Conservation & Sustainability



Projects...



- ☞ OV Environmental Sustainability Plan
- ☞ Solar Ready Measures
- ☞ Graywater Ready Measures
- ☞ Landscape & Water Harvesting Code
- ☞ Greenhouse Gas Inventory
- ☞ Energy Audit
- ☞ Environmentally Sensitive Lands Ordinance
- ☞ Energy Efficiency & Conservation Block Grant
- ☞ EPA Climate Change Showcase Communities Grant
- ☞ U.S. Mayors Climate Protection Agreement
- ☞ EPA Energy Star Challenge

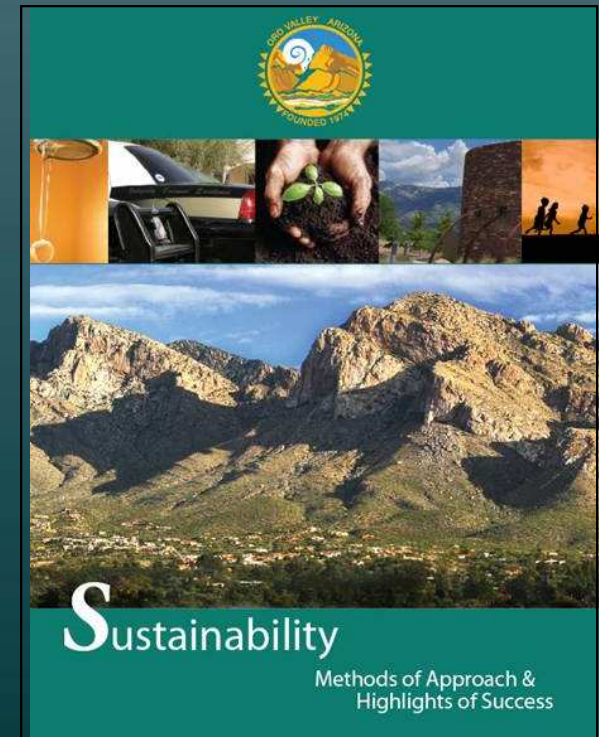


ENVIRONMENTAL SUSTAINABILITY PLAN

Sustainability Plan Categories



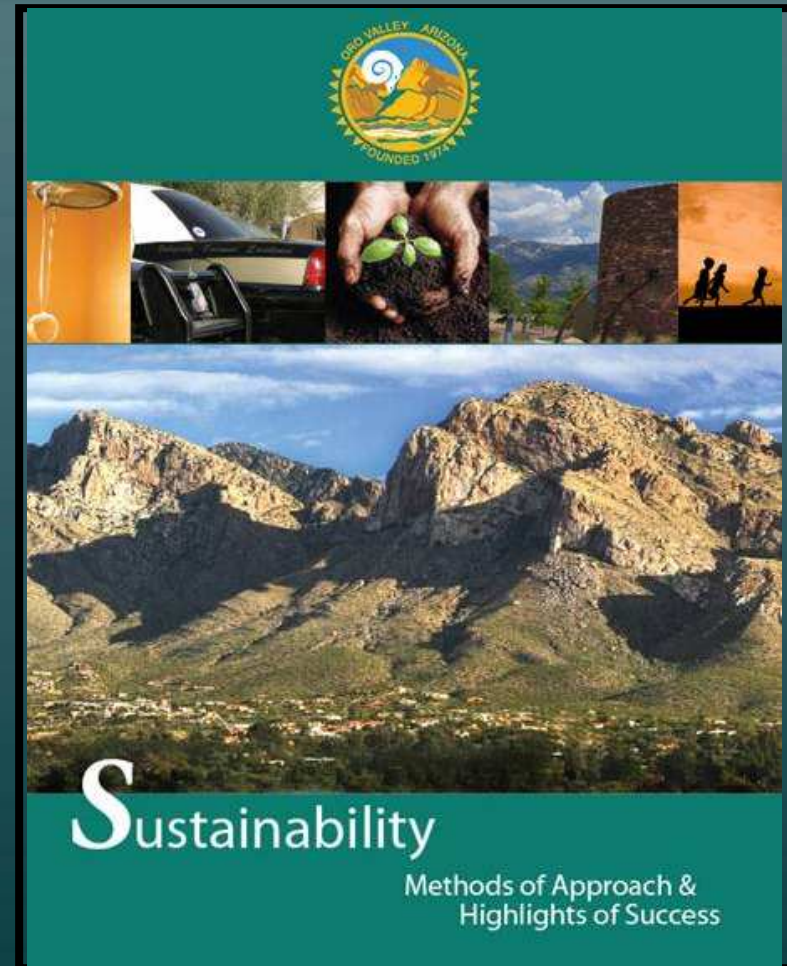
- ☞ Sustainability
- ☞ Land Conservation & Planning
- ☞ Transportation Efficiencies
- ☞ Building
- ☞ Water Conservation
- ☞ Renewable Resources
- ☞ Waste Reduction
- ☞ Stormwater
- ☞ Procurement



What are the Big Ideas?



- ☞ Organization
- ☞ Conservation
- ☞ Efficiency



Cost Saving Opportunities



Consumption

2009 Expenditure

☞ Paper	\$20,000+/-
☞ Fuel	\$477,893
☞ Water	\$153,656
☞ Energy	\$1,200,000

Energy Efficiency Conservation Block Grant



- ☞ Formal Notification of Award
- ☞ Phase I: Energy Audit
- ☞ Phase II: Strategy
 - Due by December 4, 2009
- ☞ Phase III: Implementation

EVALUATION OF ENERGY CONSERVATION MEASURES



- ☞ Interior & exterior lighting
- ☞ Lighting controls
- ☞ Water conservation
- ☞ Solar photovoltaic
- ☞ Solar thermal
- ☞ Rate analysis
- ☞ Low E window film
- ☞ Ceiling fans
- ☞ Direct Digital Controls (DDC)
- ☞ Central plant
- ☞ Cool roof
- ☞ HVAC zone control
- ☞ High Efficiency Packaged Units
- ☞ Variable Frequency Drives (VFDs)
- ☞ Preventative maintenance
- ☞ Demand-controlled ventilation
- ☞ Pump efficiency measurement
- ☞ Premium efficiency motors
- ☞ Data Energy Management

Major Improvements...

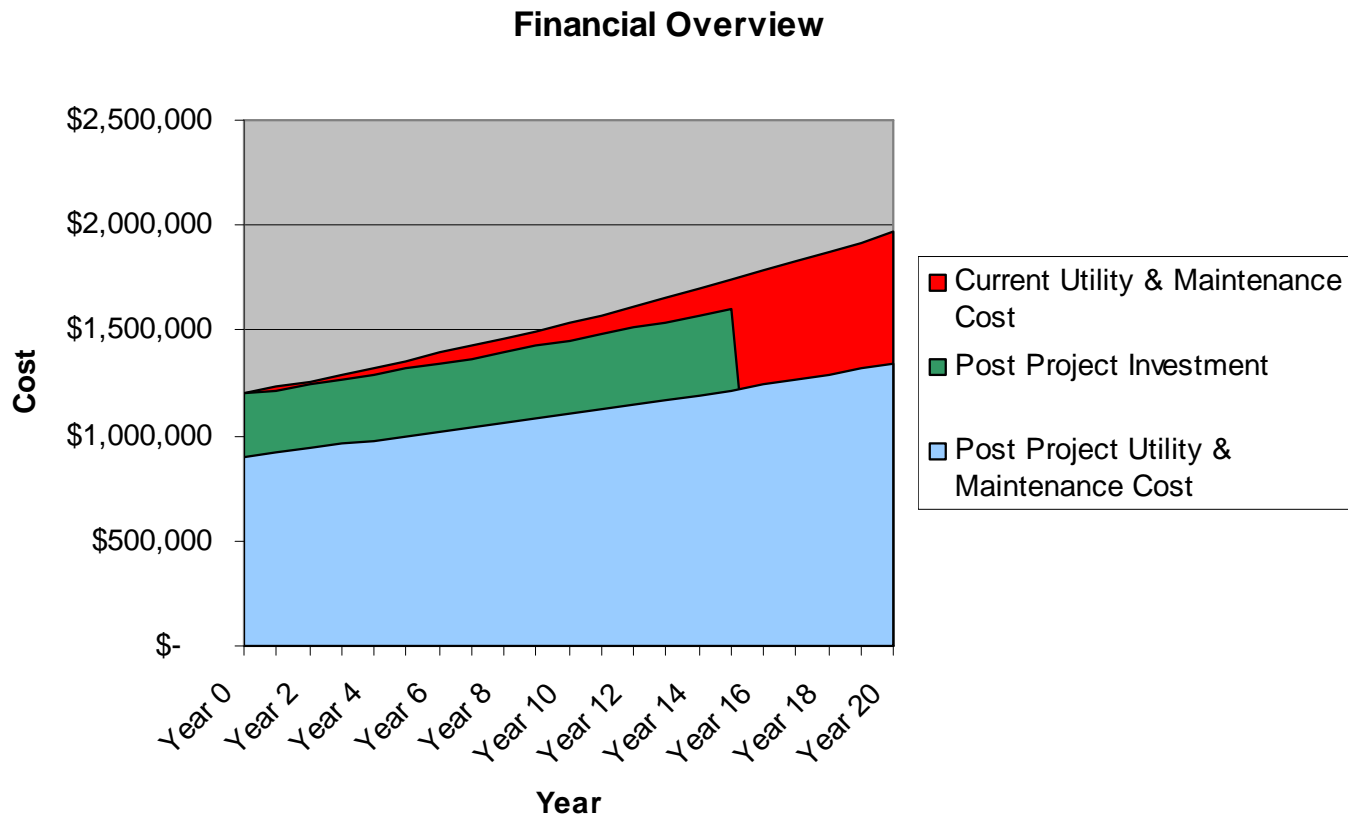


☛ Lighting Fixtures	1522
☛ HVAC Unit Replacement	10
☛ Water Conservation Fixtures	108
☛ Energy Management Controls, Bldg's	6
☛ Low-E Window Film., Bldg's	6
☛ Pump/Fan Motors	10
☛ Variable Frequency Drives	4
☛ JDK Pool Solar Heating, Panels	46
☛ New Pool Cover	1
☛ New Ramada	1
☛ Street Lighting, Fixtures	253
☛ Solar PV Covered Parking, Panels	1344
☛ Police HQ Solar Water Heating	1

Solar Production



PROJECT FINANCIAL OVERVIEW



- Instead of sending dollars out for utilities – invest cost reductions into Town Infrastructure without capital costs
- Utilize and Apply ARRA Funds where appropriate
- Pursue alternative finance sources (CREBs) to maximize Town benefits

Results...



- ☛ Reduce costs and energy consumption in Town facilities
- ☛ Upgrade capital energy-related equipment
- ☛ Improve building operations and maintenance
- ☛ Standardize building controls
- ☛ Secure onsite renewable energy
- ☛ Meet environmental management responsibilities



Solar-Ready Measures

Solar Heating Measures



- ☛ Full Solar Hot Water System
or
- ☛ Conduit with stub out
or
- ☛ Insulated plumbing stub out
and
- ☛ Space for future 80 gallon water heater, expansion tank, and heat exchanger



Solar PV Measures



- ☞ Breaker Space in Electric Panel
- ☞ Area for Solar Equipment in proximity to Electric Panel
- ☞ Conduit to Roof



The Bottom Line



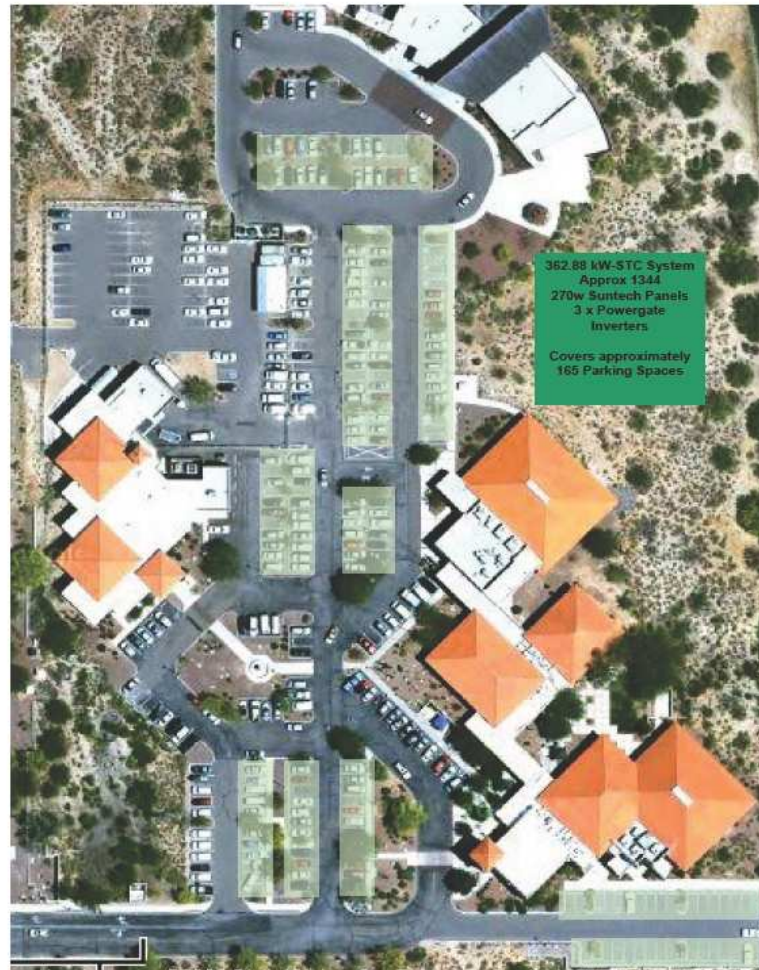
Benefits:

- ☛ Energy Savings
- ☛ New Home Marketing
- ☛ Reduced Cost to Retrofit
- ☛ TEP, State, and Federal Incentives

Cost:

- ☛ Less than \$100.00 per home for Solar water heating (\$75.00 rebate available for pre-wiring)
- ☛ \$50.00 for Photovoltaic (PV) Roof Conduit

Looking Forward...



Town of Oro Valley